

AMENDMENTS TO THE SPECIFICATION

Please amend paragraph [0001] as follows.

[0001] This patent document is related and hereby incorporates by reference in their entirety U.S. Pat. App. Ser. No. 10/284,183, filed October 31, 2002, entitled: "Efficient Spin-Injection Into Semiconductors" (~~Attorney Docket No. 100203402-1~~); U.S. Pat. App. Ser. No. 10/284,360, filed October 31, 2002, entitled: "Magnetic Sensor Based on Efficient Spin Injection into Semiconductors" ~~Semiconductor~~ (~~Attorney Docket No. 100203403-1~~); co-filed U.S. Pat. App. Ser. No. ~~UNKNOWN~~ 10/631,999, entitled "Spin Injection Devices" (~~Attorney Docket No. 200300477-1~~); and co-filed U.S. Pat. App Ser. No. ~~UNKNOWN~~ 10/632,038, entitled "Amplifiers Using Spin Injection And Magnetic Control Of ~~Electron Spins~~," (~~Attorney Docket No. 200300686-1~~) Spin Direction."

Please amend paragraph [0014] as follows.

[0014] In accordance with an aspect of the invention, a square-law detector having a magnetic-semiconductor-magnetic heterostructure uses injection of spin-polarized electrons from one magnetic region through a semiconductor control region into another magnetic region while signal currents through a nearby nanowire induce a magnetic field in the control region. The magnetic field rotates the spins of the electrons and changes the conductivity between the two magnetic regions. An output signal corresponding to current flow between the two magnetic regions has a component proportional to the square of a sum of the signal currents when fixed magnetizations in the two magnetic regions are substantially ~~collinear~~ collinear, i.e., substantially parallel or substantially antiparallel to each other.